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ABSTRACT

This document, which is designed for use in developing a tech prep competency profile for the occupation of radiographer, lists technical competencies and competency builders for 18 units pertinent to the health technologies cluster in general as well as those specific to the occupation of radiographer. The following skill areas are covered in the general units: employability; professionalism; teamwork; computer literacy; documentation; infection control and risk management; medical terminology; anatomy, physiology, and pathology; medical law and ethics; psychology of stress; psychology of human relations; first aid and medical emergencies; general administrative duties; vital signs; nutrition; basic pharmacology; patient education; and examinations. Among the competencies specific to the occupation of radiographer are the following: identify characteristics of x-radiation; explain how x-rays are produced; describe effects of radiation on the human body; explain how/which pathological processes affect radiographic imaging; practice established radiation safety procedures; demonstrate knowledge of equipment; demonstrate knowledge of diagnostic radiology procedures; prepare, check, and use equipment and materials for radiographic procedures; provide accurate radiographic record identification/retrieval; prepare patients for radiographic procedures; perform radiographic procedures; perform venipuncture and intravenous line management; expose, process, and store radiographic film; and maintain supply inventory. (MN)

ED 387 683

TECH PREP

"GET SERIOUS . . . ABOUT SUCCESS"

CE 070 087

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Radiographer

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Radiographer

NOTE: Each TCP should respond to labor market demands in your area. Therefore, the following pages should be examined before being selected for use in TCP Part I (See "The TCP Process" Tab). For example, some units may not apply to your situation, nor might all the competencies within each unit be appropriate. Also, note that several units appear within each of the twelve occupations in this binder. Those "common" units should only appear once in the draft competency list for TCP Part I if you are compiling several occupations in a cluster format (See "TCP Matrix" Tab).

Units to Consider:	Page
Employability Skills	RAD-3
Professionalism	RAD-8
Teamwork	RAD-12
Computer Literacy	RAD-14
Documentation	RAD-15
Infection Control and Risk Management	RAD-16
Medical Terminology	RAD-23
Anatomy, Physiology, and Pathology	RAD-24
Medical Law and Ethics	RAD-31
Psychology of Stress	RAD-33
Psychology of Human Relations	RAD-35
First Aid and Medical Emergencies	RAD-38
General Administrative Duties	RAD-40
Vital Signs	RAD-46
Nutrition	RAD-49
Basic Pharmacology	RAD-51
Patient Education	RAD-53
Examinations	RAD-55
Radiography	RAD-60

DON'T FORGET TO INSERT
YOUR ACADEMIC COMPETENCIES HERE

Communications Literacy, Mathematics Literacy, Science Literacy, and Technology Literacy have been removed so that you may insert your own academic lists here.

COMMUNICATIONS LITERACY

(e.g., Reading, Writing, Speaking, and Listening)

MATHEMATICS LITERACY

(e.g., Algebra, Geometry, Trigonometry, Calculus)

SCIENCE LITERACY

(e.g., Physical Science, Environmental Science, Agriscience, Biology, Chemistry, Physics, Anatomy & Physiology)

TECHNOLOGY LITERACY

(i.e., the impact of technology on humans and their home, work, and play environments)

Unit: Employability Skills

Competency: Develop a career plan

Competency Builders:

Identify current interests and aptitudes
Identify common barriers to employment
Describe strategies to overcome employment barriers
Locate resources for finding employment
Research job trends
Identify career options
Identify advantages and disadvantages of career options (in addition to other than monetary)
Identify job requirements
Investigate education/training opportunities
Evaluate personal strengths and weaknesses

Competency: Prepare for employment

Competency Builders:

Identify traditional and non-traditional employment sources
Identify present and future employment opportunities (by geographic location)
Research job opportunities, including non-traditional careers
Compare salary ranges and benefit packages
Compile occupational profile
Identify rights and responsibilities of equal employment opportunity laws
Design resume and cover letter
Target resume
Secure references
Investigate generic and specific employment tests (e.g., civil service exam; drug screening)
Use follow-up techniques to enhance employment potential
Demonstrate legible, written communication skills using correct grammar, spelling, punctuation, and concise wording
Describe methods for handling illegal questions on job application forms and during interviews
Write letter of application
Research prospective employer and services performed
Explain critical importance of personal appearance, hygiene, and demeanor
Interpret job description
Demonstrate appropriate interview question and answer techniques
Demonstrate methods for handling difficult interview questions
Evaluate job offers
Write letter of acceptance
Write letter of declination
Demonstrate good listening skills
Ask for the job tactfully
Participate in extracurricular activities (e.g., student government, community projects,)

Competency: Evaluate the importance of self-esteem as an employability skill

Competency Builders:

Identify factors that affect self-esteem
Compare effects of low self-esteem and high self-esteem
Identify strategies to promote positive self-esteem

Competency: Demonstrate job retention skills

Competency Builders:

Identify employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene
Exhibit appropriate work habits and attitude
Demonstrate ability to set priorities
Identify behaviors to establish successful working relationships
Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age
Identify opportunities for advancement
List reasons for termination
List consequences of being absent frequently from job
List consequences of frequently arriving late for work
Demonstrate interpersonal relations skills (i.e., verbal and written)
Demonstrate negotiation skills
Demonstrate teamwork
Follow chain-of-command
Exhibit appropriate job dedication

Competency: Demonstrate knowledge of work ethic

Competency Builders:

Define work ethic
Identify factors that influence work ethic
Differentiate law and ethics
Describe how personal values are reflected in work ethic
Describe how interactions in the workplace affect personal work ethic
Describe how life changes affect personal work ethic

Competency: Exhibit appropriate work ethic

Competency Builders:

Use time-management techniques
Avoid personal activity during work hours
Attend work as scheduled
Adhere to company and/or governmental policies, procedures, rules, and regulations
Exercise confidentiality
Demonstrate appropriate human relations skills
Adhere to rules of conduct
Accept constructive criticism
Offer constructive criticism
Take pride in work
Resolve conflict
Manage stress
Avoid sexual connotations and harassment
Adjust to changes in the workplace
Demonstrate punctuality
Assume responsibility for personal decisions and actions
Take responsibility for assignments
Follow chain-of-command

Competency: Apply decision-making techniques

Competency Builders:

Identify decision to be made
Identify ownership of decision to be made
Identify possible alternatives and their consequences
Make decisions based on facts, legality, ethics, goals, and/or culture
Apply time factor(s)
Present decision to be implemented
Evaluate decision made
Take responsibility for decision

Competency: Apply problem-solving techniques

Competency Builders:

Identify problem
Select appropriate problem solving tools/techniques
Identify root problem cause(s)
Track root problem cause(s)
Identify possible solutions and their consequences (e.g., long term, short term, crisis)
Use resources to explore possible solutions to problem
Contrast advantages and disadvantages of each solution
Identify appropriate action
Evaluate results
Identify post-preventive action

Competency: Exhibit characteristics for job advancement

Competency Builders:

Display positive attitude
Demonstrate knowledge of position
Perform quality work
Adapt to changing situations and technology
Demonstrate capability/responsibility for different positions
Identify characteristics of effective leaders
Identify opportunities for leadership in work place/community
Demonstrate initiative to affect change in workplace
Participate in continuing education/training program
Responds appropriately to criticism from employer, supervisor, or other employees
Exhibit awareness of corporate culture
Prepare for job setbacks
Exhibit continual growth based on performance evaluation
Set realistic goals

Unit: Professionalism

Competency: Project professional image

Competency Builders:

Define professionalism
Exhibit professional appearance
Exhibit professional manners
Project professional attitude
Identify individuals' vital role in organization
Exhibit proper etiquette in professionally-related situations

Competency: Achieve individual and professional goals

Competency Builders:

Set flexible, realistic, and measurable goals
Identify potential barriers to achieving goals
Identify strategies for addressing barriers to goal achievement
Breakdown long-term goals into short-term goals
Prioritize goals
Commit to goals
Adjust goals
Obtain support for goals
Reward goal achievement

Competency: Manage personal finances

Competency Builders:

Explain need for personal management records
Balance checkbook
Identify tax obligations
Analyze how credit affects financial security
Compare types and methods of investments
Compare types and methods of borrowing
Compare types and methods of insurance
Compare types of retirement options/plans
Identify discriminatory vs. non-discriminatory expenditures

Competency: Support community well-being

Competency Builders:

Identify environmental, educational, and social issues
Participate in social and/or community activities

Competency: Achieve organizational goals

Competency Builders:

Evaluate personal goals in relation to organizational goals
Monitor progress by evaluating feedback
List responsibilities in relation to organization goals
Accomplish assigned tasks
Exercise responsibility in relation to organizational goals
Set appropriate personal performance standards
Communicate goals with supervisor and peers
Demonstrate knowledge of products and services
Promote organizational image and mission

Competency: Demonstrate positive relations in the workplace

Competency Builders:

Identify personality types of self and other
Identify various management styles
Support employer expectations
Support employer decisions
Accept constructive criticism
Give constructive feedback
Adapt to changes in workplace
List factors to consider before resigning
Write letter of resignation

Competency: Manage stressful situations

Competency Builders:

Accept stress as part of daily life
Identify personal and professional factors contributing to stress
Describe physical and emotional responses to stress
Evaluate positive and negative effects of stress on productivity
Identify strategies for reducing stress
Implement strategies to manage stress
Create strategies for developing and maintaining support systems

Competency: Analyze effects of family on work and work on family

Competency Builders:

Identify how family values, goals, and priorities are reflected in work place
Identify responsibilities and rewards associated with paid and non-paid work
Identify responsibilities and rewards associated with families
Explain how family responsibilities can conflict with work
Explain how work can conflict with family responsibilities
Explain how work-related stress can affect families
Explain how family-related stress can affect work
Identify family support systems and resources
Identify work-related support systems and resources
Communicate with family regarding work

Competency: Apply lifelong learning skills

Competency Builders:

Define lifelong learning
Identify factors that cause need for lifelong learning
Analyze effects of change
Identify reasons why goals change
Describe importance of flexibility and adaptability
Evaluate need for continuing education/training

Competency: Manage professional development

Competency Builders:

Identify career opportunities
Modify career plan
Participate in continuing education/training opportunities
Document continuing education/training
Read profession-related manuals, technical journals, and periodicals
Attend meetings, workshops, seminars, conferences, and demonstrations
Participate in professional organizations
Build personal/professional mentor relationship
Build personal/professional support system
Build professional network
Strengthen communication skills
Strengthen leadership skills
Strengthen management skills

Unit: Teamwork

Competency: Demonstrate knowledge of teamwork

Competency Builders:

Define empowerment
Differentiate work groups and teams
Identify conditions essential to teamwork (e.g., brainstorming)
Explain influence of culture (e.g., corporate, community) on teamwork
Identify appropriate situations for using teams
Define team structures (e.g., cross functional, quality improvement, task force, quality circles)
Identify team building concepts
Describe characteristics and dynamics of teams
Identify characteristics of effective team leaders and members
Identify responsibilities of a valuable team member
Identify methods of involving each member of a team
Explain how individuals from various backgrounds contribute to work-related situations (e.g., technical training, cultural heritage)
Explain the purpose of facilitators
Define consensus
Define reward/recognition system

Competency: Demonstrate teamwork

Competency Builders:

Identify purpose of team and intended goal (include time frames)
Structure team around purpose
Define responsibilities of team members
Contribute to efficiency and success of team
Work toward individual and team milestones
Analyze results of team project
Facilitate a team meeting
Assist team member(s) with problem
Monitor time frame
Stress continuous improvement
Accept failure as part of learning

Competency: Use teamwork to solve problems

Competency Builders:

Identify appropriate situations for using teams
Use problem-solving process in a team setting
Identify quality management processes/techniques
Identify quality assurance processes/techniques
Prepare presentation

Competency: Conduct team meetings

Competency Builders:

Plan agenda
Schedule meeting and location
Invite appropriate personnel
Solicit outside speakers as needed
Assign someone to take minutes
Facilitate introductions
Invite questions and comments and group participation
Focus team on agenda items
Assign appropriate action, time frame and accountability to tasks
Monitor time
Close meeting on time
Publish minutes in timely manner
Set ground rules
Avoid placing individual agendas above the group's agenda

Unit: Computer Literacy

Competency: Describe personal computer operations

Competency Builders:

Explain how data is stored in main computer memory
Explain how computer system executes program instruction
Explain computer storage capacity
Explain how data is represented
Describe data storage techniques
Identify types of memory

Competency: Operate computer hardware

Competency Builders:

Practice proper media handling techniques
Identify hardware and its use
Use hardware (e.g., mouse, modems, touch screen, printers, digitizers, scanners)
Keyboard efficiently
Demonstrate basic care of hardware
Explain need for and application of security levels/procedures

Competency: Use software

Competency Builders:

Define software types and functions
Perform functions necessary to operate software
List advantages and disadvantages of integrated and dedicated software
Operate system software
Demonstrate basic use of spreadsheets
Demonstrate word processing skills
Demonstrate basic use of databases
Demonstrate system commands
Apply security levels/procedures while handling sensitive data

Unit: Documentation

Competency: Demonstrate proficiency in technical documentation

Competency Builders:

Record data
Maintain test logs
Compile cumulative reference notebook/record

Competency: Demonstrate proficiency in technical report writing

Competency Builders:

Write out procedures
Design charts and graphs
Outline reports
Write reports
Present resports
Complete equipment failure reports
Compose technical letters and memoranda
Write formal reports
Demonstrate ability to use cross reference/technical manuals

Unit: Infection Control and Risk Management

Competency: Comply with local, state, and federal regulations

Competency Builders:

Explain state and federal governmental roles in universal precautions as outlined by the Centers for Disease control (CDC)
Comply with Occupational Safety and Health Administration (OSHA) regulations
Explain purpose of Material Safety Data Sheets (MSDS)
Comply with Environmental Protection Agency (EPA) regulations
Report communicable diseases to local health authorities
Use precautions to prevent contamination
Demonstrate use of fire and safety equipment
Correct safety hazards
Write incident reports for accidents or safety infractions

Competency: Comply with environmental safety standards, accident prevention methods, and disaster plans

Competency Builders:

Observe environmental safety rules of facility
Identify potential hazardous situations
Explain universal precautions to transmission of infectious diseases (e.g., HIV/AIDS, hepatitis)
Identify fire prevention methods, fire control, fire alarm systems, and fire reporting procedures
Demonstrate use of fire extinguisher
Identify facility disaster plan
Demonstrate safety precautions for using equipment
Demonstrate safety precautions for using liquids and poisonous substances
Conduct safety inspection of client area
Correct safety hazards (e.g., spills)
Complete incident reports for accidents or safety infractions
Identify legal implications of accidents in health care facility
Explain potential sources of hazards, (e.g., fire, electrical, chemical, biological, radioactive)
Follow procedures for hazardous situations (e.g., eye and face wash, shower, fire extinguishers)
Store materials properly
Label materials properly
Follow manufacturer's instructions for safe operation of all equipment and instruments

Competency: Maintain personal safety and hygiene

Competency Builders:

Use universal precautions
Demonstrate isolation techniques
Wash hands aseptically
Use eye/faceshield protection
Wear gloves
Wear mask
Wear uniform or professional attire
Apply principles of aseptic techniques and sterility
Practice proper hygiene
Immunize self against communicable diseases
Complete incident reports as required
Demonstrate proper body mechanics
Demonstrate safe and effective sterilizing methods for instruments and equipment
Demonstrate safe and effective use of safety equipment
Identify at-risk behaviors which promote the spread of HIV/AIDS and/or hepatitis
Differentiate fact from fallacy regarding the transmission of HIV/AIDS and hepatitis
Identify principles of ergonomics
Identify common causes of back injuries
Demonstrate proper body mechanics involved in lifting, moving, transferring, ambulating, and positioning patient

Competency: Maintain infection control of work area

Competency Builders:

Identify modes of transmission of infection
Identify methods for preventing infection transmission
Differentiate between bacteriostatic and bacterialcidal
Identify disinfection techniques
Define "nosocomial infection"
Identify terms related to cleaning and disinfecting
Outline measures to be taken to clean and disinfect
Outline flow of dirty equipment and materials
Contain used linens
Isolate contaminated linens
Clean work areas
Disinfect work areas

Competency: Apply aseptic and sterilizing principles

Competency Builders:

Read and follow manufacturer's instructions for safe operation of all equipment and instruments
Maintain infection control
Prescrub instruments
Disinfect instruments
Sterilize instruments
Operate sterilizing equipment
Store sterilized equipment and supplies
Maintain quality-control log
Define asepsis
Identify methods for sterilizing and disinfecting reusable equipment
Define spore strip and how it is used to guarantee sterilization
Explain why dating of sterilized equipment is necessary
Explain why proper documentation of disinfection and sterilization procedures is necessary

Competency: Dispose of waste materials in compliance with government regulations

Competency Builders:

Practice safe, sanitary, and sterile procedures
Dispose of noninfectious waste
Dispose of infectious waste
Dispose of hazardous waste
Dispose of controlled substances
Dispose of needles and sharp instruments properly

Competency: Demonstrate isolation techniques

Competency Builders:

Describe different types of isolation
Demonstrate mask, gown, and gloving techniques
Demonstrate use of protective eyewear/faceshield
Demonstrate double bagging technique
Demonstrate procedures for disposal of soiled materials
Provide care for patient using isolation technique
Collect specimen from isolation patient
Disinfect isolation unit

Competency: Maintain patient safety

Competency Builders:

Apply restraints (e.g., soft, vest)
Monitor use of restraints
Utilize gait belt
Assist patient to walk with assistive ambulation devices
Demonstrate safe usage of patient transport equipment
Demonstrate safe handling of patient medical equipment (e.g., IV's, catheters, oxygen tubing)
Identify proper bed height
Position patient maintaining proper body alignment, supporting body parts
Demonstrate patient transfer techniques
Identify safety needs of medicated patient
Demonstrate usage of side rails
Identify placement of patient call device
Orient patient to surroundings

Competency: Explain sexually transmitted diseases (STDs)

Competency Builders:

Differentiate fact from fallacy regarding the transmission and treatment of STDs
Identify community resources and services available to victims of STDs
Identify at-risk behaviors which promote the spread of AIDS
Describe infection control techniques designed to prevent the spread of STDs

Competency: Practice quality control

Competency Builders:

Identify quality control parameters
Maintain quality control parameters
Prepare quality control charts and graphs
Calculate means, standard deviations, and coefficients of variation
Identify trends, shifts, and "out of control" situations
Address "out of control" situations
Identify bias in control systems
Maintain quality control procedure manual (including laboratory policies; laboratory organization and personnel definition; procedure for collection, labeling, andtransportation of specimens; work sheets; log books, and reporting of results; instructions for processing specimens; laboratory saftey related to biological, chemical, mechanical, and electrical hazards and the disposal of contaminated materials; monitoring quality control of equipoment, media, reagents, and stains)

Competency: Conduct proficiency testing

Competency Builders:

Explain rules and regulations regarding proficiency testing (i.e, acceptable parameters for constituents, laboratory areas address by proficiency testing, and rules of inspecting agencies and Medicare-approved systems)
Explain the construction of blind and double-blind studies
Compare peer results
List sources of proficiency testing materials
Process proficiency testing materials

Unit: Medical Terminology

Competency: Use common medical symbols, abbreviations, and acronyms

Competency Builders:

Identify commonly used symbols (e.g., O_2)
Write out full names of commonly used acronyms (e.g., IV, PACU, IPPB, CPAP)
Write out full names of commonly used abbreviations (e.g., bx= biopsy)
Spell medical terms correctly
Demonstrate use of Roman numeral system

Competency: Demonstrate knowledge of medical terminology

Competency Builders:

Define, spell, and pronounce basic Greek and Latin prefixes and suffixes
Spell basic Greek and Latin prefixes and suffixes
Pronounce basic Greek and Latin prefixes and suffixes
Identify principal terms relating to the body as a whole (e.g., ambulation, hypothermia)
Define terms related to the integumentary system
Define terms related to the skeletal system
Define terms related to the muscular system
Define terms related to the nervous system
Define terms related to the circulatory/cardiovascular system
Define terms related to the lymphatic system
Define terms related to the respiratory system
Define terms related to the digestive system
Define terms related to the endocrine system
Define terms related to the urinary system
Define terms related to the reproductive system
Define terms related to the senses
Define terms related to immunology
Define terms related to pathology

Unit: Anatomy, Physiology, and Pathology

Competency: Demonstrate general knowledge of basic chemistry

Competency Builders:

Identify elements on periodic table
Design simple chemical formulas
Contrast atoms verses molecules
Define synthesis, decomposition, and exchange reactions
Define diffusion, filtration, and osmosis
Differentiate between acids and bases

Competency: Demonstrate general knowledge of the human body

Competency Builders:

Define anatomy and physiology and explain their relationship
Describe the anatomical position
Identify body directions, planes, and cavities
Name the major organ systems and their functions
Classify major organs by the organ system they are within
Define cell composition, shape and size
Identify cell regions and organelles and explain their function
Identify basic life processes of cell division and transportation
Identify the four major tissue types, their function and subtypes
Define neoplasm and distinguish between benign and malignant
Describe effect of aging across the lifespan

Competency: Demonstrate knowledge of the integumentary system

Competency Builders:

List the functions of the integumentary system
Describe skin's response to touch/pressure, temperature, and pain
Name the layers of the skin
Identify structures associated with the skin, hair, hair follicle, sebaceous gland, and sudoriferous gland
Name the major body membranes
Identify common skin disorders
Describe common types of skin lesions

Competency: Demonstrate knowledge of the skeletal system

Competency Builders:

List functions of the skeletal system
Name methods of classifying bone
Identify bone types within each classification method
Explain the structure and function of a long bone
Describe the composition of bone
Define function and dysfunction of bone marrow
Explain the process of bone formation and growth
Identify major bones of the human skeleton
Name types of bone markings and their associated terms
Define joint and describe the typical structure of a joint
Name categories of joints
Compare the amount of movement allowed by each type of joint
Define types of motion
Identify various types of fractures
Identify the various methods of correction for fractures
Identify common disorders and injuries of bones and joints

Competency: Demonstrate knowledge of the muscular system

Competency Builders:

Identify types of muscle tissue
Describe muscle contraction
Define the parts of a muscle and explain major muscle types
Define muscle tone, isotonic and isometric contractions
Name types of movements produced by skeletal muscle contractions
Identify the major muscles of the human body
Identify common abnormal conditions of the muscles
Identify origin, insertion and function of muscles
Describe common disorders and injuries of the muscles

Competency: Demonstrate knowledge of the nervous system

Competency Builders:

Describe the general functions of the nervous system
Identify the main parts of the nervous system
Name principle cell types that compose the nervous system
Describe the neuron, its function, and the existing types of neurons
Describe the neuralgia, its function, and the existing types of neuralgia
Define ganglia, nuclei, tracts and nerves, noting their differences
Describe the events of the nerve impulse
Identify parts of the brain
Describe structures and functions of the various parts of the brain and spinal cord
Explain function of the autonomic nervous system and its divisions
Describe common disorders and injuries of the nervous system

Competency: Demonstrate knowledge of the circulatory/ cardiovascular system

Competency Builders:

Identify the structures and functions of the heart
Trace the pathway of blood through the heart
Describe routes of blood circulation
Define blood pressure, pulse, systole, diastole and cardiac cycle
Describe the pathway of impulses through the heart's conduction system
List factors that influence heart rate
Identify the structure and function of the blood vessels - arteries, veins and capillaries
Identify major blood vessels
Identify structures involved in fetal circulation
Identify several pulse points
Identify major components of blood
Identify the blood types
Describe the blood clotting process
Describe common disorders of the circulatory/cardiovascular system

Competency: Demonstrate knowledge of the lymphatic system

Competency Builders:

Name the structures composing the lymphatic system
Identify the functions of the lymphatic system
Explain the relationship between the lymphatic system and the cardiovascular system
Explain the immune response in relationship to the lymphocytes
Define antigens
Define antibodies and ways in which antibodies act against antigens
Differentiate between active and passive immunity
Describe common disorders of the lymphatic system

Competency: Demonstrate knowledge of the respiratory system

Competency Builders:

Identify major respiratory system organs and structures describing the function of each
Describe the function of major respiratory system organs and structures
Define cellular respiration, external respiration, internal respiration, ventilation, expiration and inspiration
Describe the process of gas exchange in the lungs and the tissues
Explain role of the respiratory muscles in breathing
Identify brain areas involved in the control of respiration
Explain respiratory volumes and capacities
Describe a common disorders and injuries of the respiratory system

Competency: Demonstrate knowledge of the digestive system

Competency Builders:

Identify the structures and functions of the digestive system
Describe the mechanisms of mastication, swallowing, vomiting and defecation
Define anabolism and catabolism
Define basal metabolic rate and total metabolic rate
Describe common disorders of the digestive system

Competency: Demonstrate knowledge of the endocrine system

Competency Builders:

Differentiate between endocrine and exocrine glands
Identify major endocrine glands and hormones produced by each
Explain response of body systems to hormones
Describe common endocrine gland disorders

Competency: Demonstrate knowledge of the urinary system

Competency Builders:

Identify components of the urinary system
Explain the functioning of the urinary system
Identify nitrogenous waste found in the urine
Explain how water and electrolyte balance is maintained by the body
Define micturition
Explain how micturition occurs
Describe common disorders of the urinary system

Competency: Demonstrate knowledge of the reproductive system

Competency Builders:

Explain the general function of the reproductive system
Identify major organs of the reproductive system
Describe the phases of the menstrual cycle
Explain the process of meiosis, spermatogenesis, and oogenesis
Identify stages of embryonic development
Explain the physiology of childbirth
Describe common disorders of the reproductive system

Competency: Demonstrate knowledge of the senses

Competency Builders:

Identify major structures and functions of vision, hearing, balance, smell, taste, and touch
Define refraction, accommodation, real image, and emmetropic
Describe common disorders and injuries of the senses

Competency: Demonstrate knowledge of immunology

Competency Builders:

Explain the immune response in relationship to the lymphocytes
Define antigens and antibodies
Explain the differences among the five major classes of antibodies
Describe the relationship between antigens and antibodies
Differentiate between active and passive immunity
Describe common immunodeficiencies, allergies, and autoimmune disorders

Unit: Medical Law and Ethics

Competency: Comply with medical law and ethics

Competency Builders:

Differentiate between legal and ethical behavior
Explain terms, principles, and characteristics of legal and ethical behavior
Explain state and federal rules and regulations governing the practice of the profession
Explain legal ramifications of breaching rules and regulations
Explain effects of unethical and/or unlawful behavior of health care professionals
Practice within the role and scope of the profession as defined by law, job description, and facility/arena of practice

Competency: Exhibit ethical behavior

Competency Builders:

Describe ethical dilemma in health care (e.g., death and dying, medical ethics committees)
Explain health care professional's responsibility in situations of patient abuse and neglect
Explain health care professional's responsibility in situations of coworker chemical addition
Identify personal, societal, and global implications of substance use and abuse
Explain effects of unethical behavior of health care professionals

Competency: Describe legal ramifications of misconduct

Competency Builders:

Explain terms, principles, and characteristics of legal and ethical behavior
Explain legal and ethical ramifications of breaching patient confidentiality

Competency: Practice discretion regarding patient information

Competency Builders:

Identify components of Patient Bill of Rights
Communicate patient's rights
Identify patient's rights and responsibilities
Describe reasons for sharing patient information
Identify appropriate persons to whom information can be released
Describe methods of maintaining confidentiality
Explain truth-in-ending law
Explain anatomical gift act
Explain advance directives
Explain living will
Explain informed consent
Identify reasons for termination of patient services
Explain consequences of noncompliance with physician's recommendations
Explain remuneration
Describe impact of communicable diseases
Describe the importance of proper sample identification

Competency: Practice personal professional protocol with medical community

Competency Builders:

Explain process of certification/licensure of health professionals
Comply with tax requirements
Maintain integrity of personal files
Explain the statute of limitation
Identify ownership of medical records
Maintain procedures for legal access to patient and/or records
Investigate professional liability coverage options

Unit: Psychology of Stress

Competency: Analyze factors that influence a patient's response to stress

Competency Builders:

Explain stress as a concept
Differentiate between stress and stressors
Explain how an individual's perception of stress influences his response to stressors
Explain how internal and external mitigating factors influence one's response to stress
Identify coping mechanisms used to decrease stress
Identify biological adaptive responses to stress

Competency: Analyze physiological response to stress

Competency Builders:

Describe the stress response on the autonomic nervous system, endocrine system, cardiovascular system, renal system, respiratory system, and hemopoietic system
Explain how the internal and external non-specific mitigating factors relate to the physiological stress response
Differentiate between immune systems response to stressors in children and adults
Explain how the concept of stress relates to activation of the disease process

Competency: Analyze psychological response to stress

Competency Builders:

Identify psychological stressors
Describe the relationship between personality types and the stress response
Summarize the primary and secondary appraisal of a stressor
Differentiate between cognitive and behavioral coping mechanisms
Differentiate among problem-focused, emotion-focused, and appraisal-focused coping in relation to stressors
Identify a patient's ability to cope with stress based on individual and stressor characteristics
Identify types of coping strategies
Identify selected defense mechanisms
Summarize ineffective coping behaviors
Explain the psychobiologic response of anxiety as it relates to stress
Describe the disequilibrium associated with response to stressors

Competency: Provide care for a patient with an ineffective coping response

Competency Builders:

Assess psychological responses to stress in a patient
Promote exploration of feelings when providing nursing care
Describe strategies to assist in stress reduction
Implement strategies to assist in stress reduction
Evaluate selected nursing interventions and suggest alternative measures

Unit: Psychology of Human Relations

Competency: Explain human growth and development

Competency Builders:

Describe characteristics of growth and development from conception to birth
Describe characteristics of growth and development from birth through preschool
Describe characteristics of growth and development from school age through adolescence
Describe characteristics of growth and development of the adult through the life span

Competency: Demonstrate appropriate communication techniques

Competency Builders:

Identify components of provider-client relationship
Identify ways to cope with stress
Identify uniqueness of individual (e.g., cultural, generational, social, ethnic)
Treat clients with respect and dignity
Identify assertive and aggressive responses
Differentiate between acceptable and unacceptable touching
Identify barriers to communication

Competency: Establish rapport

Competency Builders:

Describe proper manner for greeting a patient
Adapt communication to individual's ability to understand (e.g., functioning level, emotional state, and educational level)
Respond to verbal and nonverbal communication
Serve as liaison between physician, patient, and others
Solicit patient's understanding of communication
Translate medical terms into language patient can understand
Interpret patient's reaction to illness and disability
Describe individual, cultural and socioeconomic differences in people
Identify methods in which to communicate with patients or responsible party with sensory disorders
Support patient/responsible party during the grief process
Orient patient to policies, facilities, and staff
Respond to patient/responsible party in a therapeutic manner
Identify patient personality types
Treat patient with empathy and impartiality
Support patient's right to make decisions regarding care
Encourage ventilation of patient/responsible party's feelings

Competency: Follow established procedures for communication and documentation

Competency Builders:

Transmit reports of patient status
Demonstrate basic computer skills
Complete interdepartmental requisitions (e.g., therapies, procedures, tests)
Complete an incident report
Monitor accuracy in all communications
Initiate medical records according to institutional policies
Maintain medical records according to institutional policies
Identify need for documenting and reporting
Interpret patient-related documents participate in team conferences
Report change in patient status
Clarify physicians orders
Differentiate charting methods
Respond to request for service
Respond to request from patient's funding source
Notify patient or responsible party of changes required in treatment plan
Write instructions for use of patient equipment (e.g., orthosis, prosthesis)
Write instructions for a home therapy program
Witness a consent form
Create an informational display

Competency: Document patient progress

Competency Builders:

Record current treatment rendered and patient response
Include parameters in notes (e.g., subjective, objective, assessment, plan)
Use correct grammar, spelling, and approved abbreviations
Secure appropriate signatures
Write legibly
Use appropriate resources

Unit: First Aid and Medical Emergencies

Competency: Use emergency procedures

Competency Builders:

Identify emergency procedures
Contact local emergency assistance
Demonstrate first responder procedures
Acquire first aid certification
Acquire CPR certification

Competency: Perform first aid

Competency Builders:

Assist with first aid for wounds or fractures
Administer first aid to control bleeding
Administer first aid for shock
Administer first aid for burn patient
Assist with first aid for poisoned patient
Assist with choking patient
Assist with patient having seizure
Assist with syncopal patient

Competency: Maintain cardiopulmonary resuscitation (CPR) according to accrediting agency standards

Competency Builders:

Update CPR certification
Administer CPR to infants and children
Administer CPR to adults
Administer care for obstructed airways for infants, children, and adults

Competency: Respond to medical emergencies

Competency Builders:

Identify patient
Perform head to toe patient assessment
Assess patient needs
Describe signs and symptoms of emergency situations
Identify basic emergency equipment
Take appropriate action

Unit: General Administrative Duties

Competency: Perform scheduling and recordkeeping duties

Competency Builders:

Schedule patient appointments
Coordinate activities with other departments
Coordinate activities with community agencies
Schedule space and equipment for therapy
Maintain daily charges for equipment/treatment
Comply with reimbursement requirements
Maintain patient files/charts
Maintain patient attendance records
Schedule reoutine equipment maintenance and repair

Competency: Perform other departmental duties

Competency Builders:

Assist in dealing with vendors
Assist in maintenance of depärtmental budget
Assist in writing/revising job description
Assist in writing/revising forms (e.g., home programs, documentation forms)
Maintain departmental cleanliness
Maintain inventory/supplies

Competency: Manage reception area

Competency Builders:

Prepare reception area
Greet visitors and patients
Advise patient of office hours
Manage children accompanying patient
Identify ways to communicate with patients with sensory disorders
Screen non-patient visitors
Explain delays to patients physician's fees

Competency: Demonstrate telephone handling techniques

Competency Builders:

Place calls
Record telephone messages (e.g., date, time, initial calls)
Screen calls
Transfer calls
Obtain information for return calls
Handle emergency calls
Make arrangements for patient's admission to hospital
Make patient referrals
Phone prescriptions to pharmacy

Competency: Maintain appointment schedules

Competency Builders:

Write appointments legibly
Prepare appointment calendar
Record appointments
Prepare appointment cards
Maintain recall system
Confirm appointments
Schedule outpatient diagnostic tests
Make referral appointments for patients

Competency: Maintain medical records and laboratory reports

Competency Builders:

Obtain patient information
Prepare folder
Prepare charge documentation
Explain importance of records management
File information alphabetically or numerically according to office protocol
Retrieve patient record from file
Prepare cross-reference file
Process incoming medical reports
Purge records
Prepare reports concerning patient care, condition, census, accidents, and incidents
Maintain current documentation of patient status and care
Complete immunization records
Compile patient laboratory reports
Process completed laboratory reports
Document results from reference laboratories
Verify tests ordered and test received

Competency: Prepare office communications

Competency Builders:

Compose business correspondence
Edit business correspondence
Transcribe letters from dictating machine
Keyboard business correspondence
Print documents
Proofread for errors in correspondence
Complete appropriate consent forms
Address envelopes
Process incoming mail
Maintain files for correspondence
Classify outgoing mail
Label outgoing mail

Competency: Use office equipment

Competency Builders:

Operate calculator
Operate checkwriter
Operate computer
Operate copy machine
Operate fax machine
Operate multi-line telephone system

Competency: Demonstrate knowledge of different payment systems

Competency Builders:

Identify required procedures for private carriers
Identify required procedures for non-insured patients
Identify required procedures for health maintenance organization (HMO)
Identify required procedures for preferred provider organization (PPO)
Identify required procedures for independent practitioner association (IPA)
Identify required procedures for U.S. government employees (CHAMPUS)
Identify required procedures for Aid to Dependent Children (ADC)
Identify required procedures for general assistance (GA)
Identify required procedures for Medicare
Identify required procedures for Medicaid
Identify required procedures for worker's compensation

Competency: Perform diagnostic coding

Competency Builders:

Stay current with diagnostic coding changes
Complete forms for international classification of diseases (ICD-9 CM)
Complete forms for current procedural terminology (CPT)
Complete forms for health care procedural code (HCPC)
Complete forms for diagnostic related groups (DRG)
Complete forms for J-codes

Competency: Process insurance claims/forms

Competency Builders:

Define primary and secondary carriers
Define third party administrators
Explain payment and rejection procedures (e.g., co-pays, deductibles, errors)
Process quick-claim forms
Use procedure codes
Log and track insurance claims/forms

Competency: Perform financial functions

Competency Builders:

Apply basic bookkeeping fundamentals
Interpret and explain fees
Arrange financial agreements
Complete ledger
Prepare account summaries
Collect fees
Issue receipts
Maintain petty cash account
Prepare bank deposits
Verify invoices
Collect delinquent bills
Collect and post payments
Process credit card transactions
Prepare checks for signature
Prepare payroll
Reconcile bank statements, cash, and/or receipts
Complete Worker's Compensation forms and Medicare/Medicaid forms
Prepare schedule of accounts receivable
Prepare schedule of accounts payable
Maintain accounts receivable
Maintain accounts payable

Unit: Vital Signs

Competency: Interview patient

Competency Builders:

Complete patient information sheets
Record medical history (e.g., allergies, current medications)
Assess bio-psycho-social condition
Validate data with patient or patient's family member(s)

Competency: Measure temperature

Competency Builders:

Follow safety and aseptic precautions for taking temperature
Identify normal range and average temperature of oral, axillary, tympanic, and rectal methods of measuring body temperature
Identify factors that may affect temperature
Select route for measuring temperature
Demonstrate use of different types of thermometers
Record temperature measurements
Report abnormal temperature measurements
Maintain thermometer(s)

Competency: Measure pulse

Competency Builders:

Identify criteria for selecting pulse site (e.g., femoral, apical, radial)
Identify normal pulse range for different age groups
Identify factors that may affect pulse
Identify variations from normal pulse that should be reported
Record pulse

Competency: Measure respiration

Competency Builders:

Assess lung sounds
Measure rate, depth, and rhythm of respiration
Identify normal respiratory rate for different age groups
Report signs of compromised respiration
Identify factors that may affect respiration
Record respiration

Competency: Measure blood pressure

Competency Builders:

Identify myths and misconceptions related to blood pressure and hypertension
Identify etiology of hypertension
Identify consequences of untreated hypertension
Identify normal range of blood pressure for different age groups
Record blood pressure
Identify factors that affect blood pressure
Select appropriate cuff size
Describe the effect of inappropriate cuff size on accurate blood pressure reading
Identify variations from normal blood pressure that should be reported
Demonstrate use of aneroid sphygmomanometer gmomanometer
Demonstrate use of mercurial sphygmomanometer gmomanometer
Demonstrate palpated blood pressure

Competency: Obtain physical measurements

Competency Builders:

Measure adult height
Measure adult weight
Measure adult chest and waist expansion
Measure infant height
Measure infant weight
Measure infant head and chest circumference
Measure auditory status (e.g., tympanogram)
Measure visual status (e.g., eye chart)
Identify color blindness
Record all results

Unit: Nutrition

Competency: Identify fundamentals of nutrition

Competency Builders:

Identify nutrients and food groups
Explain role of nutrients to body functions
Explain regional, cultural, and religious food patterns
List factors which must be considered when purchasing food
Identify component of a balanced diet across the life span (e.g., USDA Food pyramid)
List factors which must be considered when storing food
Identify methods of food preparation
Instruct patient in sound nutrition principles

Competency: Identify nutritional needs related to special conditions and/or diseases

Competency Builders:

Describe common diets related to health alterations (e.g., pureed, mechanical-soft)
Describe special diets
Identify community resources
Identify risks of non-compliance with dietary restrictions
Educate patient regarding dietary hazards (e.g., caffeine, fats)

Competency: Draw correlation between diet and exercise

Competency Builders:

Identify methods of exercise
Explain effect of exercise and food on energy level
Write an exercise plan
Identify weight-related issues

Competency: Identify facets of alternative nutrition

Competency Builders:

Identify indications and effects of tube feedings
Identify indications and effects of intravenous fluids
Identify indications and effects of lipids
Identify indications and effects of hyperal

Unit: Basic Pharmacology

Competency: Maintain supply of medications

Competency Builders:

Check inventory stock
Contact supplier
Rotate stock
Process narcotic forms (i.e., Drug Enforcement Agency (DEA) license)
Store medications properly
Prepare expired medications for disposal
Dispose of medications properly (i.e., comply with government regulations)

Competency: Calculate dosage according to physician's orders

Competency Builders:

Verify accuracy of medical orders
Use Physician's Desk Reference (PDR)
Transcribe medication order
Calculate oral dosage
Calculate parenteral dosage
Calculate sublingual dosage
Calculate pediatric dosage
Calculate intravenous dosage and rate of flow

Competency: Instruct patients on use of medications

Competency Builders:

Provide verbal and/or written instructions for medication use
Explain use of medications (e.g., identify side effects, adverse effects, interactions)
Maintain standing orders according to physician's protocol (e.g., prescription refills)

Competency: Dispense medications according to medical orders

Competency Builders:

Identify patient
Verify patient allergies
Use reference materials
Verify accuracy of medical orders
Calculate dosages
Prepare oral medication
Identify correct anatomical sites
Prepare intramuscular, intradermal, and subcutaneous injectable medications
Prepare and administer sublingual medications
Prepare transdermal medications
Prepare inhalant medications
Prepare instillation medications
Prepare and administer topical medications
Prepare and administer rectal medications
Prepare and administer vaginal medications
Assist with administration of local anesthesia
Administer medications
Document medication administration
Document patient response to medications

Competency: Evaluate response to medication

Competency Builders:

Identify possible adverse reactions to medication
Assess patient reaction to medication
Report untoward reactions to appropriate sources
Document patient response to medication

Unit: Patient Education

Competency: Inform patient/family about diagnostic procedures

Competency Builders:

Distribute literature regarding advised procedure
Explain diagnostic procedures
Explain preparation for diagnostic procedures
Translate medical terminology into lay terms
Distribute resource materials related to test results
Schedule patient follow-up
Obtain informed consent signature

Competency: Educate patient/responsible party about self-care related to results of diagnostic procedure/therapy

Competency Builders:

Identify support groups and resources
Obtain verbal and written information to plan patient's care
Reinforce special diets with patient/responsible party
Reinforce recommended exercise programs with patient/responsible party
Reinforce specialized applications (e.g., ortho, dietary, ostomy, splints, orthotics) with patient/responsible party
Reinforce self-administration of medications with patient/responsible party
Reinforce health maintenance techniques with patient/responsible party
Refer patient/responsible party to support groups and resources
Solicit patient/responsible party feedback
Record teaching and patient response
Instruct patient/responsible party in necessary adaptations to environment
Instruct patient/responsible party in adaptive techniques (e.g., activities of daily living, homemaking)

Competency: Provide psycho-social care for patient/family

Competency Builders:

Arrange emotional support for patient and family member(s)
Report child abuse and/or neglect
Respond to emotional needs of terminally ill patient and family member(s)
Apply reality orientation technique
Arrange diversional activity for patient

Competency: Inform patient about World Health Organization (WHO) immunization requirements

Competency Builders:

Instruct patient/family on infant, preschool, adolescent, and adult immunizations
Instruct patient/family on international requirements
Reinforce instructions from other health professionals to patient/family member(s)

Unit: Examinations

Competency: Demonstrate general knowledge of diagnostic studies

Competency Builders:

Describe the various methods of examining patients
Explain the functions of commonly used examining instruments
Describe the sequence of steps in a general physical examination
Identify various patient positions used in examinations
Identify common diagnostic blood tests performed in the medical laboratory
Differentiate between cultures and smears used in bacteriology
Identify sources from which cultures and smears may be obtained
Describe common radiological and sonographic studies and imaging techniques
Identify the purposes of nuclear medicine
Identify common cardiopulmonary diagnostic examinations
Identify common neurological diagnostic examinations

Competency: Demonstrate principles of body mechanics and ergonomics

Competency Builders:

Identify principles of ergonomics
Identify common causes of back injuries
Demonstrate proper body mechanics involved in lifting, moving, transferring, ambulating, and positioning patient
Assist patient in and out of wheelchair
Assist patient with crutches
Assist patient with cane
Assist patient with walker
Assist patient with standing
Assist patient with cast or splints
Assist patient to bathroom
Position patient using supportive devices (e.g., pillows, footboards)
Perform ROM (i.e., range of motion)

Competency: Assist with general examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment
Change paper on examination table
Provide for patient privacy
Prepare patient for examination
Communicate with patient with special needs (e.g., hearing or vision disorder)
Inventory personal property
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Clean examination room after procedure

Competency: Assist with eye, ear, nose, and throat examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment
Prepare patient for examination
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Assist with and chart eye irrigation
Assist with and chart ear irrigation
Assist with and chart tympanometry
Assist with and chart laryngoscopy
Describe taste bud reactions
Conduct visual screening
Conduct auditory screening
Administer eye, ear, and nose medications
Clean examination room after procedure

Competency: Assist with obstetric and gynecological examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment
Prepare patient for examination
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Obtain cytology history
Assist with Pap smear
Instruct patient in self breast examination
Clean examination room after procedure

Competency: Assist with pediatric examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment
Prepare patient for examination
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Record measurements on growth chart
Record immunizations
Apply restraints when needed (e.g., papoose board)
Clean examination room after procedure

Competency: Assist with proctology and gastrology examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment
Prepare patient for examination
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Assist with proctoscopy
Clean examination room after procedure

Competency: Assist with orthopedic examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment (e.g., soaks)
Prepare patient for examination
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Assist with casting and splinting procedures
Demonstrate use of ambulatory aids
Assist patient in wheelchair transfer to and from examination table
Clean examination room after procedure

Competency: Assist with neurological examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment
Prepare patient for examination
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Clean examination room after procedure

Competency: Assist with geriatric examination

Competency Builders:

Prepare examination room(s)
Set-up trays and equipment
Prepare patient for examination
Assist physician with examination
Carry out physician's orders
Follow up patient needs
Ensure procedure documentation and labeling
Clean examination room after procedure

Unit: Radiography

Competency: Identify characteristics of x-radiation

Competency Builders:

Define terms used in radiography
Explain where x-rays are in the electromagnetic spectrum
Identify characteristics of x-radiation (e.g., no mass or charge)
Compare different methods of measuring x-radiation

Competency: Explain how x-rays are produced

Competency Builders:

Identify the different parts of the x-ray tube
Describe the process for production of x-radiation
Differentiate among the different types of radiation produced
Describe radiographic density (i.e., contrast and detail
Explain the Inverse Square Law and its effect on x-ray production
Apply radiographic formulas and their effect on x-ray production
Explain Ma, KvP and time and their relationship on x-ray production
Describe factors that affect radiographic density, contrast, detail, and distortion

Competency: Describe effects of radiation on the human body

Competency Builders:

Explain somatic and genetic effects of x-rays
Identify tissues most and least sensitive to radiation
Differentiate among exposure variables and their effects, both acute and chronic
Describe methods for reducing patient exposure
Explain methods of operator protection
Identify common methods of personnel monitoring
Describe LD 50/30 (i.e., Lethal Dose)
Explain MPD (i.e., Maximum Permissible Dose)

Competency: Demonstrate knowledge of pathological processes that affect radiographic imaging

Competency Builders:

Differentiate between additive and destructive pathologies
Identify pathological processes that affect each body system
Correlate pathological conditions on images from various imaging modalities

Competency: Practice radiation safety procedures in accordance with OSHA and EPA

Competency Builders:

Demonstrate radiation safety precautions for patients
Demonstrate radiation safety precautions for operators
Comply with equipment safety laws
Elicit patient history which might indicate a risk or a reaction (e.g., allergies, tape sensitivities, injection of an iodinated contrast medium)
Wear radiation monitoring device(s) while on duty
Document personal radiation exposure
Question female patients about possible pregnancy and alert physician
Remove all unnecessary persons from area prior to taking radiograph
Perform safety checks of radiographic equipment and accessories (e.g., lead aprons and gloves, collimator accuracy)
Place protective shield(s) over patient's radio-sensitive organs prior to exposure
Minimize personal and patient radiation exposure through principles of time, distance, and shielding
Demonstrate appropriate infection control technique(s) when radiographing a patient in isolation
Report radiologic accidents and/or spills immediately to proper authorities
Identify need for medical attention and administer emergency care to patient in critical situation, bleeding, epileptic seizure, contrast media reactions; respiratory/cardiac distress)

Competency: Demonstrate knowledge of equipment

Competency Builders:

Demonstrate the function of a diagnostic x-ray unit
Demonstrate the function of a fluoroscopic unit
Demonstrate the function of a portable x-ray unit
Demonstrate the function of a portable c-arm unit

Competency: Demonstrate general knowledge of diagnostic radiology procedures

Competency Builders:

Describe common radiological procedures
Describe common fluoroscopic procedures
Describe common mammography procedures
Describe common computerized tomography procedures
Describe common magnetic resonance procedures
Describe common sonography procedures
Describe common special procedures
Describe common nuclear medicine procedures
Describe common quality assurance procedures
Describe common radiation therapy procedures

Competency: Ready equipment and materials for radiographic procedures

Competency Builders:

Warm up x-ray tube to achieve proper operating conditions
Measure appropriate patient parts for requested examination
Identify appropriate exposure factors
Modify exposure factors for circumstances (e.g., body hibitus, voluntary and involuntary motion, pathological conditions)
Restrict beam exposure to area of interest
Set appropriate exposure factors to achieve optimum image quality
Perform radiographic examination in a sequence which avoids or minimizes undesirable effects
Check radiographs to verify they contain proper identification and are of diagnostic quality
Identify corrective measure if radiograph is not of diagnostic quality
Clean patient and/or equipment to remove anything that might interfere with radiograph quality
Assist physician in fluoroscopy by preparing the fluoroscopic unit and accessories for use and by adjusting controls as requested
Utilize sterile techniuq
Respond to malfunctioning medical equipment
Clean facilities and equipment
Disinfect or sterilize facilities and equipment
Dispose of contaminated items in preparation for next examination
Report malfunctions in radiographic unit
Differentiate among contrast media
Prepare contrast media accurately when appropriate
Obtain immobilization devices when necessary
Obtain adequate cassettes and accessories

Competency: Perform radiographic equipment check procedures

Competency Builders:

Clean facilities and equipment
Disinfect or sterilize facilities and equipment
Dispose of contaminated items in preparation for next examination
Report malfunctions in radiographic unit

Competency: Provide accurate radiographic record identification and retrieval

Competency Builders:

Record required information following performance examination
Retrieve radiographic patient records (e.g., radiographs or reports)
Identify patient using information on request form
Confirm patient's identity by checking wristband and/or by questioning patient
Imprint proper patient identification and markers onto film
Verify correctness of patient identification and markers on film
Combine radiographic requisition with radiographs for interpretation and filing
Check radiographic requisition to verify accuracy of information

Competency: Ready patient for radiographic procedures

Competency Builders:

Elicit patient history which might indicate a risk or a reaction (e.g., allergies, tape sensitivities; injection of iodinated contrast media)
Identify need for medical attention and administer emergency care to patient in critical situation (e.g., bleeding; epileptic seizure, contrast media reactions; respiratory/cardiac stress)
Assist patient in moving, transferring and ambulating
Explain procedure to patient to relieve anxiety and gain patient's cooperation during procedures
Give patient appropriate breathing instructions prior to making exposure
Assist physician in observing vital signs
Use body landmarks and standard radiographic positions to expose the desired anatomical part(s)
Assist physician with radiographic procedure if requested
Monitor medical equipment attached to patient (e.g., IVs, oxygen) while in radiology department

Competency: Perform radiographic procedures

Competency Builders:

Apply universal precautions
Align patient, radiographic/fluoroscopic unit, and image receptor to product images of requested anatomical structures/systems
Use immobilizaton devices as needed
Use body landmarks and standard radiographic positions to expose the desired anatomical part(s)
Initiate rotor prior to making exposure
Give patient appropriate breathing instructions prior to making exposure
Check radiographs to assure optimum diagnostic image quality to include density, contrast, detail, distortion, and positioning
Identify corrective measure if radiograph is not of diagnostic quality

Competency: Perform venipuncture and IV management

Competency Builders:

Differentiate venous from arterial vessel
Locate appropriate site for venuous access
Prepare skin using aseptic technique
Introduce needle/catheter to selected vein
Monitor site for extravasation
Discontinue IV
Administer IV contrast material

Competency: Expose radiographic film

Competency Builders:

Follow manufacturer's instructions for film and equipment placement
Adjust radiographic factors on x-ray equipment
Apply infection control procedures
Position patient, radiographic/fluoroscopic unit, and image receptor to produce images of requested anatomical structures/systems
Use immobilization devices as needed

Competency: Process exposed radiographic film

Competency Builders:

Follow manufacturer's instructions for x-ray processors and solutions
Mix solutions for developing and fixing radiographic film
Follow darkroom procedures
Unload cassettes
Handle film properly
Read thermometer
Interpret time and temperature chart
Load film into processor
Follow safety precautions to prevent eye injury and minor burns
Dispose of mixed solutions in accordance with EPA regulations
Reload cassettes
Clean equipment
Monitor performance of automatic processor using sensitometry
Report malfunctions in automatic processor

Competency: Store radiographs and unexposed film

Competency Builders:

Handle film(s) properly
Hang radiographs on viewboxes in proper orientation
File radiographs
Check expiration date
Store exposed and unexposed film properly

Competency: Maintain supply inventory

Competency Builders:

Identify supplies to be kept in stock
Identify appropriate stock levels
Organize supplies
Re-order supplies
Maintain a clean working environment

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